THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

Meeting Minutes for September 13, 2001

Members in Attendance:

Mark P. Smith	Designee, EOEA
Marilyn Contreas	Designee, DHCD
Richard Thibedeau	Designee, DEM
Lee Corte-Real	Designee, DFA
Glenn Haas	Designee, DEP
Richard Butler	Public Member
Gary Clayton	Public Member
David Rich	Public Member

Others Attending

Arleen O'Donnell	DEP
Michele Drury	DEM OWR
Joan Sozio	Foxborough Water and Sewer Commission
Leo Potter	Foxborough Water and Sewer Commission
Paul Lenz	DEM OWR
Linda Marler	DEM OWR
Pine Dubois	JRWA
Steve Garabedian	USGS
Jackie Murphy	EOEA
Cynthia Giles	DEP
Mike Gildesgame	DEM OWR

Agenda Item 1: Executive Director's Report

- Smith opened the meeting with a moment of silence for the victims of the recent terrorist attacks on New York and Washington D.C.
- O'Donnell introduced Cynthia Giles, the new DEP Assistant Commissioner for the Bureau of Resource Protection. Giles started at DEP on Monday. O'Donnell thanked Haas for filling in as the DEP designee. Giles will be the new DEP designee, starting next month but today, Haas will be representing DEP.
- Gartland introduced Paul Lenz, who recently started at DEM as the watershed hydrologist. He will be working primarily on watershed initiative projects.
- Smith mentioned that DEM has hired Anne Monnelly to work with the Secretary as the Director of the Lakes and Ponds Initiative. Starting this week, Michelle Robinson will join the Lakes & Ponds program as an aquatic biologist.

- Smith noted a change in the agenda. The target fish study presentation will be postponed, as the major presenters were not available.
- There are concerns about flooding and sewer overflows near the Mystic River and the Alewife River. Smith has been meeting with legislators on these issues. A study on storm water will be conducted here.
- Sunday there was a tribute to Alexandra Dawson sponsored by MACC
- Secretary Durand hosted a reception for Bob Varney, the new regional administrator for EPA Region 1.

Marler gave the Hydrologic Conditions report

- In July dry conditions began developing. This trend continued in August, particularly in the Western, Connecticut River valley, and Central regions. The Northeast and Southeast regions have received ample precipitation for this water year and are not a concern, with the exception of an area on Cape Cod.
- We are probably approaching a drought advisory for the western region, if things don't improve in the next couple of weeks. Last night, the National Weather Service issued a drought and water resource statement that included portions of Massachusetts. The Palmer Drought Index currently shows western Massachusetts in a moderate drought.
- The Weather Service continues to forecast that Massachusetts will experience normal conditions this fall. It appears to be a short term problem. They are expecting a more permanent trough will develop in the jet stream in the next couple of weeks and that we will start to get the resumption of more normal rainfall. The problem this summer was that we only received flashy thunder storms, which brought variable amounts of rainfall.
- The Connecticut River Valley and Western regions are in the worst shape, but we have not yet triggered state drought thresholds.
- Ground water levels are still okay throughout the state. These will take awhile to be impacted by the low rainfall conditions. Ground water levels are slow to recover as well.
- Surface water runoff will show impacts before ground water. Below normal precipitation levels in the western part of the state have resulted in low surface water runoff conditions. We are expecting another storm tonight which should improve those conditions. We are hopeful that starting next week, we'll develop a more stable weather pattern that will bring more normal rainfall. As of Monday, the percentage of medians for streamflow across the state was at an average of 65%. There are low streamflow levels throughout the state but the flashy rainfall has resulted in a lot of variety across the state (i.e. one gage will show above average conditions while another will be below normal).
- Water suppliers seem to be in good shape. Reservoirs are near normal for this time of year.
- Fire conditions are expected to worsen due to these dry conditions and as the relative humidity becomes lower as we approach fall. Fire danger is still at moderate levels throughout the state.
- The Palmer Drought Index predicts that near normal conditions will prevail in Massachusetts, though adjacent states will be getting worse.
- Three tropical storms have developed. Tropical Storm Erin has passed Massachusetts and is not expected to hit land. Tropical Storm Felix is projected to continue spinning over the ocean northward and Tropical Depression 8 is heading towards Florida.

- Smith asked why the drought index hasn't tripped for the Western region. Marler responded that surface and ground water levels haven't persisted below normal for a few months. Precipitation levels are borderline. We haven't exceeded enough of the thresholds yet.

Because there was not a quorum present, Smith announced another agenda change. Agenda Item 4 was moved up.

Agenda Item 4: Discussion of the Interim Definition of Stressed Basins

Smith stated that we've been working on stressed basins for a year and a half. We've developed a draft report, we've done ranking of basins and we have a site specific method, all of which we've been using. However, it is only in draft form, therefore, it is not clear what the status is. The recommendation is that we approve an interim definition of a stressed basin. This will allow the work we've done to be more confidently used by the agencies and the WRC as we move forward. It is only an interim definition because we have only completed the hydrologic portion of the stress basin report. We also want to include habitat and water quality as part of the overall definition of stress. Calling the definition "Interim" will indicate that we know that the work is not complete. We also want to be able to modify or update what exists as we get more experience using it.

Gartland stated that we initially started by defining stress as having quantity, quality and habitat criteria. Everyone agreed this was a good way to look at stress. We set up an interagency committee to review all the data we had available with reference to these categories. We reviewed DEP's site screening document and DEM's inflow/outflow methodology used in river basin planning. There was not enough data available in usable formats to use the quantity/quality/habitat definition statewide, so we decided to develop something to use statewide in the interim. We decided to use a quantity-based definition. We looked at about 72 stream gages with available data and looked at historical low-flow data. We specifically focused on the 7 day low-flow, 30 day low-flow and low flow duration (low pulse duration), which we obtained from the Nature Conservancy's IHA program. Low pulse duration calculates what the low flow is every year and how long it lasts (i.e. the number of days of low flow per year).

We also looked at other statistics, but decided to use these three. We ranked the statistics from lowest to highest percentiles and quartiles, in terms of how the flow came out. Flows were normalized by drainage area. The lowest 25% flows were the most stressed; the middle grouping was medium stress and the highest 25% was the least stressed. This does not assess why a river may be stressed or what the impact may be. We used the indicator stresses and made up a matrix. If the statistics for a gage fell into two of these indicators (two indicators showing medium stress, for example), this became their ranking.

Gartland stated that there are some areas where we didn't have any data. She stated that the limitations of this methodology were that it just provided a comparison from gage to gage and the cutoffs were just statistical cutoffs. Smith stated that we didn't say anything about why it is stressed. It may be stressed naturally, but we need to take that into account when we are looking at project impacts. Gildesgame congratulated Gartland and Marler on their work and asked "Now that we have it, how do we use it?"

Gartland stated that there are a lot of gaps in the data. Therefore we came up with a method to determine subbasin stress. It is a combination of the DEP site screening method and the DEM inflow-outflow method. For a subbasin, a simple water budget is developed to determine the net gain and loss. This is compared to specific flow statistics. If the net loss is greater than or equal to the August median flow, the subbasin is considered high stress; if the net loss is greater than or equal to the 7Q10 flow, but less than the August median flow, it is considered medium stress; if there is no net loss, it is considered low stress. This can be fairly easily done by a proponent. We would like to do this statewide, but there is not enough accessible data yet. The streamflows used for this criterion are generated using the USGS Streamstats program.

O'Donnell asked about the Streamstats program. Gartland answered that USGS had a point and click program that would generate streamflow statistics for the drainage area upstream of that point. This program is based on unregulated flow, so if there is a lot of human use or dams on the river, it is not all that effective.

Thibedeau asked about rivers where there were two or more gages on a stream. Is the classification based on the area upstream? Gartland answered that the committee decided that if there are two gages and the upstream is not showing stress but the downstream one is, the entire basin should have the downstream stress classification. This is because whatever happens upstream will have a cumulative impact downstream.

Gartland, Smith and O'Donnell will give a presentation to NEWWA on this Monday.

Dubois, representing the Jones River Watershed Association, stated that Jones River shows up as low stress, but she believes that it is not a low stress river. There should be qualifications on the methodology. There is no flow from Silver Lake, the headwaters of the Jones River. She said that there is an 11 mgd loss from the Jones River basin. The USGS gage is located in the tidal area of the Jones River. It is not reasonable to compare the South Coastal basin with the Berkshire basins or even the Taunton basin. It is not the same. She requested that until the other criteria for "stress" are developed, that the Jones be taken off the list.

Gartland responded that it was difficult to compare across the state. This is one of the limitations of the methodology. Per square mile, the Jones River shows up as having higher flows than those across the state, but the river also has a lot of dams across it.

Garabedian said that this says nothing about what the natural flow was at one time. It just looks at what the flow per square mile is today. Jones River is in the part of the state where there is a lot of sand and gravel and other glacial materials that would in general provide a lot of sustained low flow. Although it may look like it is in good shape now, that doesn't mean that it is in good shape relative to its natural flows.

Smith asked if there is any sense of why the Jones River's ranking looks so good. Gartland stated that it is in an area of sand and gravel, but it is also impacted in the headwaters. It is similar to the Ipswich River. The downstream gages do not indicate the upstream stresses. That's why we added the subbasin delineation. Garabedian stated that this method only provides a single measure. This method says nothing about water quality and habitat.

Dubois is concerned because she's seen these types of tools misapplied and that the Jones River can't bear anymore stress. To keep Jones River on this list may cause people to think that it is okay to overdevelop the water resources of Jones River.

Gartland said that the committee debated this back and forth. She asked for some direction from the WRC. Should we just keep the high stressed basins on the list? Should we forget about classifications altogether? O'Donnell asked how many more situations like this there are (i.e. one gage at mouth of a coastal river). Gartland was not sure.

Smith suggested that we need to further qualify what low stress is. Gartland said that she welcomes ideas. Smith said that perhaps we could develop a statement about what low stress means. Haas recommended that we think about what we are going to do with the information. The most important thing is to determine what is highly stressed. We should just show highly stressed basins and not stressed basins. Clayton agreed with Haas. We need to continue the work on the water quality and habitat information that will get us to the point where we can address cases like Jones River. Smith stated that agencies need to explain how they are going to use the stressed basin report. He asked the Commission if they wanted this done before or after the interim definition is approved. O'Donnell suggested that we didn't want to get caught up in detailed discussion of how it will be used. If we do, we will never get a definition of what is stressed. DEP can give a general discussion of how we might use it. Clayton suggested that over time, the agencies might look at how they would use it. If it causes agencies to change regulations, the regulations would have to come through this Commission. We should keep it moving. O'Donnell stated that if the Jones River is really anomalous, we should take it off the list and put it in the area with inadequate data. Dubois stated that there was a study underway funded by the Watershed Initiative, so we should have the additional data for water quality and habitat soon. The vote will be taken at the November meeting, not October.

Clayton asked about the work plan for moving forward with water quality and habitat work. Smith stated it is in the work plan. Gartland stated that we can give update in November.

Agenda Item 2: Vote on the Foxborough Interbasin Transfer Request for the Witch Pond Wells

Drury acknowledged Joan Sozio and Leo Potter from the town of Foxborough. In May, staff presented a Recommendation to approve this project. This has also been discussed at previous WRC meetings. Last month the WRC was brought up to date on what had been happening over the summer. There has been an agreement on the need for monitoring, and Foxborough has agreed to meet all the conditions of the decision.

Last month, there was still a question about their compliance with Criterion #1, meeting MEPA requirements. We have since received a response from MEPA that no further review is needed; therefore Foxborough complies with Criterion #1. They also meet Criterion #2, viable local sources. DEP has been working very closely with the town to identify and develop sources within town. DEP has concluded that in the Taunton River basin, the receiving basin, there are no viable local sources. There are a few outstanding issues under Criterion #3, Water Conservation, that need to be completed. The town is in the process of doing this now. When they complete the work on these issues, staff will come back to the WRC with a report. Staff is

saying that they conditionally comply with Criterion #3. The 4th Criterion, surface water source water management plan, doesn't apply to this proposal. Drury stated that Marler would discuss Criterion #5 (Reasonable Instream Flow) in more detail, however, staff have set thresholds and believe that if these are abided with, reasonable instream flow will be maintained and Criterion #5 will be met. For Criterion #6 (Results of the Pumping Test), the town provided the pumping tests for these wells and we used it in our analyses, so they comply with this criterion. Criterion #7 is the Local Water Resources Management Plan. Foxborough has been working diligently on their water supply and they have many of the elements of a Local Water Resources Management Plan in place already. They are also working on a Comprehensive Wastewater Management Plan. Staff would like to see all this information in one place, so we have conditioned this criterion, and we believe that it can be met. Criterion #8 has to do with cumulative environmental impacts. With the thresholds that have been set, we believe this criterion will be met.

Marler stated that the instream flow requirement could be met using thresholds and long-term monitoring, including a baseline monitoring period of one year prior to using the wells and operational monitoring including thresholds which could be implemented through the WMA permit. The thresholds have been set to protect the nearby Atlantic White Cedar Swamp, Witch Pond, flow in Bungay Brook and ground water levels in the aquifer and are consistent with thresholds imposed on the Mansfield Well #10. Mansfield has been doing baseline monitoring and, so far, the conditions present seem to be what we expected. We are hoping for the same with Foxborough. The town should be able to use these wells most of the time. During low recharge periods at the end of the summer, there is the possibility that well use will have to be curtailed. Staff will be working with DEP as they develop the WMA permit and we will be working with all the involved agencies as the hydrologic and vegetative wetlands monitoring plans are developed.

Clayton observed that the many conditions are both long and short term. Many reports will come back to WRC and staff. Can staff deal with this? Marler stated that annual report will be submitted. It won't be a terrible burden on staff to review these reports once per year. Smith stated that we are only asking for things that are critical. We have always updated the WRC on compliance with IBT conditions. With the performance standards, there will be fewer and fewer conditions, but we will always want thresholds and reports to assure that environmental resources are being protected. Marler added the vegetative monitoring plan will not need as frequent a review. Reports will be submitted every five years.

Clayton asked if staff would sign off on monitoring protocols, etc. Drury stated that staff will review it together with DEP and the Natural Heritage program and will come back to WRC, once all agree that monitoring plan is adequate, and recommend that it be approved.

Sozio stated that Foxborough needs water because of the Patriots.

Smith suggested that the Staff Recommendation be amended to put the finding under EO 385 in the positive, e.g. state that "the decision is consistent with EO 385", rather than "does not conflict with EO 385".

VOTE	Butler moved, with a second by Clayton, that the amended Staff Recommendation to approve the Interbasin Transfer from Foxborough's Witch Pond wells be approved. The vote in favor was unanimous.

Agenda Item 3: Vote on the guidance for cost comparison for the development of in-basin sources and water rates to encourage conservation

Smith stated that this was discussed at the last meeting. The only change from last month is that where we ask for a life cycle analysis and net present value for a viable local source, we have tied the discount rate to that used by EPA, for consistency. Once approved, this guidance will be included in the IBT performance standards. This guidance is tied to the regulations, which require that a proponent present cost comparisons for the development of viable in-basin sources and have water rates which encourage conservation.

VOTE	Clayton moved, with a second by Haas, to approve the guidance. The vote in favor was unanimous.

Meeting adjourned.

Minutes approved 7/10/03